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TRANSMITTAL FORM

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Application Number	09/511,986
Filing Date	February 24, 2000
First Named Inventor	Vernon M. Williams
Art Unit	2811
Examiner Name	O. Nadav
Attorney Docket Number	2269-4208US (99-0316.00/US)

ENCLOSURES ***(check all that apply)***

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment / Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
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- ☐ CD, Number of CD(s) ____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☒ **Reply Brief (7 pages)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) *(please identify below)*:

Remarks

The Commissioner is authorized to charge any additional fees required but not submitted with any document or request requiring fee payment under 37 C.F.R. §§ 1.16 and 1.17 to Deposit Account 20-1469 during pendency of this application.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm	TraskBritt, P.C.		
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Date	July 17, 2006	Reg. No.	57,829

CERTIFICATE OF MAILING

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTEFERENCES

In re Application of: Vernon M. Williams

Serial No.: 09/511,986

Filed: February 24, 2000

For: STEREOLITHOGRAPHICALLY FABRICATED CONDUCTIVE ELEMENTS, SEMICONDUCTOR DEVICE COMPONENTS AND ASSEMBLIES INCLUDING SUCH CONDUCTIVE ELEMENTS, AND METHODS

Confirmation No.: 6129

Examiner: O. Nadav

Group Art Unit: 2811

Attorney Docket No.: 2269-4208US

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REPLY BRIEF

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attn: Board of Patent Appeals and Interferences

Sir:

This Reply Brief is being submitted pursuant to 37 C.F.R. § 41.41. As July 16, 2006, falls on a Sunday and this Reply Brief is being submitted by Monday, July 17, 2006, it should be deemed to have been submitted within two months of the mailing date of the Examiner's Answer in the above-referenced appeal. 37 C.F.R. § 1.7.

VII. ARGUMENT

It is apparent from the comments that have been provided in the Examiner's Answer that the Examiner does not appreciate that there are logical boundaries on his obligation to read the claims as broadly as possible. Rather, as will be apparent from the ensuing remarks, various terms that appear in the claims have been given unreasonably broad interpretations. When the terms that are at issue in the above-referenced appeal are considered on the basis of their scopes and meanings as understood by one of ordinary skill in the art, it is apparent that the Examiner has not relied upon art that supports a *prima facie* case of anticipation or obviousness against any of the claims of the '986 Application.

A. REJECTIONS UNDER 35 U.S.C. § 102(b)

3. ANALYSIS

"Contact" is the term at issue in these rejections.

It is acknowledged that Matsuki describes an assembly that includes a semiconductor device and a film substrate. *See, e.g.,* FIG. 2. The semiconductor device and film carrier of the assembly shown in FIG. 2 of Matsuki are electrically connected to one another by way of bumps 10. More specifically, bumps 10 are interposed lead wires 11 of the film carrier and separate lead wires 7 of the semiconductor device. FIG. 2; col. 7, lines 15-34. The lead wires 7, in turn, contact and are electrically connected to primary pads 4 of the semiconductor device. FIG. 2; col. 7, lines 4-14.

While the lead wires 7, which include a plurality of layers, contact the primary pads 4 of the semiconductor device, they do not contact the lead wires 11 of the film carrier. Thus, the

lead wires 7 of the assembly described in Matsuki do not "extend[] between and contact[] contacts of the carrier and corresponding bond pads" of a semiconductor device, as would be required for a lead wire 7 of Matsuki to be considered analogous to a conductive element of independent claim 64. Moreover, as no lead wire 7 of Matsuki is in contact with both the contact pad of a first component and the contact pad of a second component, Matsuki does not anticipate the conductive element recited in independent claim 75.

Instead, it is the bumps 10 that contact the lead wires 11 of the film carrier. Matsuki does not expressly or inherently describe that the bumps 10 include a plurality of layers, however, or that the bumps 10 contact more than one pad, as are required by both independent claim 64 and independent claim 75.

As Matsuki does not anticipate each and every element of independent claim 64 or independent claim 75 in the detail set forth in these claims, the 35 U.S.C. § 102(b) rejections of independent claims 64 and 75 should be reversed, and both of these claims should be allowed.

B. REJECTIONS UNDER 35 U.S.C. § 103(a)

3. ANALYSIS

(a)/(b) Sullivan in View of Fudim

The term "layers" is at issue in the claim rejections that are based on teachings from Sullivan and Fudim. Specifically, it has been asserted that layers that are formed from the same material would be indistinguishable from each other and, thus, that the term "layer" could be arbitrarily assigned to structures with indistinguishable layers. Examiner's Answer, page 14. Taking this assertion as step further, it has been argued that the process of forming a structure

with indistinguishable layers could be conducted in a repeated, multi-layered fashion, and that the recitation of a "plurality of . . . layers" is, therefore, a process limitation. *Id.*

The claims at issue simply recite a structure that includes a plurality of layers. Unlike the Examiner's construction of the phrase a "plurality of . . . layers," the scope and meaning of this limitation are plain to those of ordinary skill in the art – a structure must include a plurality of layers to fall within the scope of one of the rejected claims. Any other interpretation would constitute over-analysis of what is meant by a "plurality of. . . layers."

Matsuki, at col. 8, lines 1-4, provides an example of the understood scope and meaning of a "plurality of . . . layers" to one of ordinary skill in the art. In this regard, Matsuki recognizes that a "layer" of conductive material may "be either a mono-layer or multi-layered." As these options are presented in the alternative to one another, it is clear that Matsuki is not arbitrarily designating some layers as "mono-layer" and others as "multi-layered," as the Examiner's over-analysis would allow. Rather, Matsuki simply recognizes that there are structural differences between a structure that includes a single layer and a structure that includes more than one layer.

As neither Sullivan nor Fudim teaches or suggests a conductive trace that includes a *plurality of* superimposed, contiguous, mutually adhered *layers*, neither Sullivan nor Fudim, taken separately or together, teaches or suggests each and every element of any of independent claims 47, 52, 110, and 114.

For these reasons, the Examiner has not established a *prima facie* case of obviousness against independent claim 47, independent claim 52, independent claim 110, or independent claim 114, as would be required to maintain the 35 U.S.C. § 103(a) rejections of these claims.

(c) Matsuki in View of Lee

It is apparent from the assertions that accompany his rejections of dependent claims 67 and 76 under 35 U.S.C. § 103(a) that the Examiner does not fully appreciate the limitations of the z-axis elastomer of Lee. Specifically, it is respectfully submitted that the Examiner does not understand that the conductive elements of the z-axis elastomer of Lee extend through the smallest dimension, or the thickness, of such a structure, not through the length of the structure. Nor does Lee provide any teaching or suggestion that would provide one of ordinary skill in the art that the conductive elements of such a z-axis elastomer could extend laterally (along the x-axis or y-axis of such a structure).

Therefore, it is respectfully submitted that the Examiner has not established a *prima facie* case that it would have been obvious for one of ordinary skill in the art to use the z-axis conductive elastomer of Lee to form the lead wires 7 of the semiconductor device disclosed in Matsuki. As such, the subject matter recited in claims 67 and 76 is, under 35 U.S.C. § 103(a), allowable over teachings from Matsuki and Lee.

(d) Congleton in View of Matsuki

The teachings of Congleton relate to semiconductor device assemblies in which preformed wires 42 are laterally extended between and bonded to contacts 10a of a semiconductor device 10 and corresponding contacts 12d of a carrier substrate 12. Col. 5, lines 55-61. It is respectfully submitted that there would be no motivation for one of ordinary skill in the art to use the deposition and patterning processes taught in Matsuki in place of the

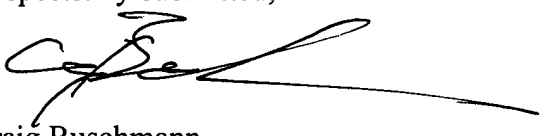
wire 42 placement and bonding techniques of Congelton, as such processes would result in wastage of material, require multiple processes (*i.e.*, deposition, masking, etching, etc.) and subprocesses, and otherwise unnecessarily complicate the assembly process taught in Congelton.

Therefore, it is respectfully submitted that the Examiner has not set forth a *prima facie* case of obviousness against independent claim 75.

It is respectfully submitted that each of the other issues on appeal in the above-referenced application has been more than adequately addressed in the Appeal Brief and Supplemental Appeal Brief that were filed in the '986 Application. It is further submitted that each dependent claim that remains pending in the '986 Application is allowable, among other reasons, for depending from an allowable independent claim.

In conclusion, it is respectfully requested that the rejections of claims 47, 48, 50-56, 58-68, 75-79, 81-85, and 110-124 be reversed, and that each of these claims, as well as claims 80 and 86-90 be allowed.

Respectfully submitted,



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Document in ProLaw